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GROUP 1700

PATENTIN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re:	Patent Application of Horst Sulzbach, <i>et al.</i>	:	Group Art Unit: 1712
Appln. No.:	09/743,125	:	Examiner: Robert E. Sellers
Filed:	April 23, 2001	:	
For:	SELF-DISPERSING, HARDENABLE EPOXY RESINS, PROCESSES FOR PRODUCING THE SAME AND METHODS OF USING THE SAME	:	Attorney Docket No.: H 3467 PCT/US

REQUEST FOR RECONSIDERATION

This is in response to the Office Action dated December 14, 2001 (Paper No. 8), in the above-identified application. This response is being timely filed as a Petition for a three-month extension of time, up to and including June 14, 2002, including an authorization to charge fees, is being submitted herewith.

Applicants respectfully request reconsideration of all pending claims and withdrawal of the Examiner's rejection, in light of the following remarks.

REMARKS

Claims 8-20 are currently pending in the present application.

In Paper No. 8, the Examiner rejects claims 8-20 under 35 U.S.C. §103(a), as being unpatentable over European Patent Publication No. EP 0435497A1 of Speranza, *et al.*, (hereinafter referred to as "EP '497"), in view of U.S. Patent No. 5,641,855 of Scherr, *et al.*,

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(hereinafter referred to as "Scherr"). The Examiner contends that EP '497 discloses adducts of dimethyl or diethyl maleate and a diaminopolyalkylene oxide in a diamine:dialkyl maleate molar ratio of 3:1, and that the adducts are reacted with an epoxy resin to yield an epoxy-functional product. (See, Paper No. 8, p. 2). The Examiner also contends that the presence of unreacted epoxy groups in the cured epoxy product is indicated by "the epoxy:active hydrogens equivalent ratio of 2:1 . . .", and that, "[a]ccordingly, the cured product of the reference is within the realm of the claimed epoxy resin." (Id.). The Examiner also argues that the water-dispersibility of the product of EP '497 would be obvious to one of ordinary skill in the art based upon the teachings of Scherr. The Examiner contends that Scherr discloses the water solubility of "an equivalent reaction product". (Id.). The Examiner argues that the combined disclosure of EP '497 and Scherr render Applicants' claimed invention obvious.

Applicants strenuously, but respectfully, traverse the Examiner's rejection and the arguments and contentions set forth in support thereof, for the following reasons.

It is well-settled that in order to establish a *prima facie* case of obviousness, and thus shift the burden of proving non-obviousness onto Applicants, the Examiner must show all of the following three criteria: (1) there must be some suggestion or motivation to modify or combine the references as suggested by the Examiner (it is not sufficient to say that the cited references can be combined or modified without a teaching in the prior art to suggest the desirability of the modification); (2) there must also be a reasonable expectation of success; and (3) the references as combined must collectively teach or suggest all limitations of the claims. The teaching or suggestion to combine and modify the cited art and the reasonable expectation of success must both be found in the prior art and not in Applicants' Specification. (M.P.E.P. §2143).

At the outset, Applicants would like to highlight for the Examiner, certain aspects of the claimed invention. One embodiment of Applicants' claimed invention is directed to a process comprising two reactions. The first reaction involves forming an intermediate product Z1 by reacting (a) one or more α,β -unsaturated carboxylic acid esters with (b) one or more aminopolyalkylene oxide compounds having at least one aminonitrogen atom with one or more

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reactive hydrogen atoms, wherein (a) and (b) are present in quantities such that the equivalent ratio of the reactive hydrogen atoms in (b) to the α,β C=C double bonds in (a) is from 10:1 to 1:10. The intermediate product Z1 is then further reacted with (c) one or more polyepoxides.

EP '497 discloses compounds prepared by reacting one mole of a mono-unsaturated carboxylic acid (e.g., maleic acid, fumaric acid, anhydrides thereof) with from 3 to 3.5 moles of a polyoxyethylene diamine. (See, EP '497, p. 4, lines 3-14). As the Examiner has noted, this is a diamine:unsaturated acid molar ratio of at least 3:1. As can be seen from the general formula (III) set forth in EP '497, the polyoxyethylene diamines disclosed therein have four reactive hydrogen atoms per mole of diamine. Each mole of carboxylic acid has one unsaturation. Accordingly, the equivalent ratio disclosed in EP '497 is at least 12:1. Four reactive hydrogen atoms (*i.e.*, "equivalents") per mole equates to 12 equivalents per three moles.

It is thus submitted that EP '497 does teach or suggest each and every element of the claimed invention. Specifically, EP '497 fails to teach an equivalent ratio of reactive hydrogen atoms in claimed component (b) to α,β C=C double bonds in claimed component (a) of from 10:1 to 1:10. Moreover, as the disclosed equivalent ratio is *at least* 12:1, it is submitted that EP '497 also fails to suggest the claimed equivalent ratio. Given that the disclosed ratio is at least 12:1 and excess reactive hydrogens are preferred (see, EP '497, p. 5, lines 26-29), it cannot reasonably be said that the reference contains teachings or suggestions which would motivate one of ordinary skill in the art to make modifications necessary to arrive at the claimed invention.

Scherr does not alleviate the deficiencies of EP '497. Moreover, Scherr does not disclose reaction products "equivalent" to those disclosed by EP '497, such that any degree of water dispersibility associated with the products disclosed in EP '497 can be considered "recognized", much less obvious to one of ordinary skill in the art.

First of all, Scherr is specifically directed to water-soluble condensation products of amino-containing compounds and at least bifunctional crosslinkers. The amino-containing compounds disclosed by Scherr are generally relatively high molecular weight polyalkylenepolyamines with molecular weights of from about 1200 to 25000, whereas EP '497

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discloses reactions products based on polyoxyethylene diamines having molecular weights of about 148 and about 192. Secondly, the products disclosed by Scherr have specific viscosity properties which are not mentioned with respect to the products disclosed in EP '497.

It is respectfully submitted that the products disclosed in Scherr and those disclosed in EP '497 are not "equivalent" as alleged by the Examiner. The Examiner may not rely on such a statement of equivalency with respect to such a factual assertion without presenting a basis in fact or sufficient scientific reasoning in the form of an affidavit or a declaration. Equivalence is not recognized within the disclosures of the references and thus requires more evidentiary support than the Examiner has set forth.

Second, Scherr also fails to teach or suggest each and every element of the claimed invention. Scherr does not teach or suggest an equivalent ratio of reactive hydrogen atoms in claimed component (b) to α,β C=C double bonds in claimed component (a) of from 10:1 to 1:10. Furthermore, such a ratio is not suggested. Scherr contains no teaching or suggestion to modify its teachings or those of EP '497 in a manner such that one would arrive at Applicants' claimed invention.

Neither of the references teaches or suggests each and every element of the claimed invention. Neither of the references contains a teaching or suggestion which would motivate one of ordinary skill in the art to modify their teachings so as to arrive at the claimed invention. Finally, one of ordinary skill in the art would have no reasonable expectation of success in making such an unmotivated modification, especially given the disclosed ratio set forth in EP '497 and the specific preference for an excess.

Accordingly, Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness, as none of the three criteria necessary to establish a *prima facie* case of obviousness has been satisfied. Thus, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. §103(a).

In view of the remarks set forth above, Applicants submit that all pending claims patentably distinguish over the prior art of record and known to Applicants, either alone or in

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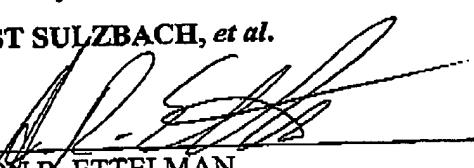
combination. Accordingly, reconsideration, withdrawal of the rejection and a Notice of Allowance for all pending claims are respectfully requested.

Respectfully submitted,

HORST SULZBACH, et al.

June 12, 2002

(Date)

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Attachments to be transmitted are as follows:

- PETITION FOR EXTENSION OF TIME UNDER 37 CFR § 1.136 (2 pgs.)
- REQUEST FOR RECONSIDERATION (5 pgs.)